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AUTHOR Edwards, J. M. B.
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ABSTRACT

Projections concerning higher education from 1975 to 1985 are offered in relation to: job opportunities for persons with postsecondary education, postsecondary enrollment levels, the finances of postsecondary institutions, and job opportunities for Ph.D.s as full-time faculty members. It is suggested that the evidence points to difficulties of absorbing college graduates into professional and managerial jobs, or jobs believed to be suitable for graduates. It is proposed that graduates will find their education increasingly less relevant to their work. According to estimates for 1984-85, overall full-time equivalent college enrollment will be about the same as in 1975 (high estimate) or will decline by about 14 percent (low estimate); enrollment will have decreased slightly in the private sector and increased slightly in the public sector (high estimate), or the private sector will lose about 28 percent of its students and the public sector about 10 percent (low estimate); the ratio of graduate to undergraduate students will be the highest in history (high and low estimates). High and low estimates are presented for tuition and fees, state and local appropriations, student aid, and income from endowment and gifts. Among the projections are the following: costs per full-time equivalent student will be 40 percent higher in the private than in the public sector in 1985, and tuitions will rise between 37 percent (low growth) and 45 percent (high growth) from 1975 to 1985. It is suggested that if the low projection of enrollments materializes, the number of full-time faculty will decline by about 9 percent from 1975 to 1980 and by about 5 percent from 1980 to 1985. Additionally, an attempt is made to define policy issues and to suggest possible strategies for higher education in the 1980s. (SW)

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AMERICAN HIGHER EDUCATION TO 1985

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INTRODUCTION

The past is a remarkably poor guide to the future. Unfortunately, it is the only guide we have. Planners, policy makers, and others whose job it is to anticipate the future are therefore apt to take a more than ordinary interest in past trends and crises. This interest is commendable, but all too often it results only in solutions to last year's problems.

Nobody can tell exactly what next year's problems are going to be. On the other hand, the present contains the seeds of the future, and certain things are that much more likely to happen because certain other things are happening now. The usefulness of projections, which should not be confused with predictions, depends on reasoning of this type. A projection shows what will happen under certain hypothetical conditions. It is neutral as to the conditions themselves; they represent the investigator's assessment of likely developments.

The Educational Policy Research Center for Higher Education and Society, which sponsored the research summarized in this report, believes that projections are one means of anticipating tomorrow's problems. The present report offers projections over the comparatively modest time span of ten years, from 1975 to 1985. More ambitious projections will become possible as the quality of the basic data improves. Not the least of our needs is that it should improve.

Our general topic is the future of postsecondary education. There are four sets of projections dealing with four separate but closely related topics: (1) job opportunities for persons with postsecondary education; (2) postsecondary enrollment levels; (3) the finances of postsecondary institutions; (4) job opportunities for Ph.D.s as full-time faculty members. We conclude with an attempt to define the policy issues and suggest possible strategies for higher education in the 1980's.

Since this report is a summary, we have kept the statistical illustrations as few and as simple as possible. For most of the tables on which they are based, and for a more detailed examination of all these topics, the reader should consult the original reports. They are:

Joseph Froomkin, Supply and Demand for Persons with Postsecondary Education (Washington, D.C.: EPRC for Higher Education and Society, October, 1976)

Joseph Froomkin Inc., Recent Developments in Postsecondary Education, 1970-1975 (Washington, D.C.: EPRC for Higher Education and Society, January, 1976)

Joseph Froomkin and Clinton McCully, A Review of Financial Developments in Higher Education, 1970/71 - 1974/75, and a Prognosis for 1980 - 1985 (Washington, D.C.: EPRC for Higher Education and Society, February, 1977)

Joseph Froomkin, Full-Time Faculty in Higher Education--Numbers, Ages, and Wages (Washington, D.C.: EPRC for Higher Education and Society, April, 1977).

Sources of data are cited in the original reports.

Although our major conclusions have not changed since the last of these reports was published, some of the projections summarized below are based on new or revised data.

Joseph Froomkin

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1. COLLEGE EDUCATION AND THE LABOR MARKET

For the twenty-five years following World War II, college graduates were the darlings of the labor market. As fast as colleges could graduate them, they were absorbed into the managerial and professional occupations traditionally considered their due. For those with postgraduate degrees, a dazzling variety of opportunities lay open; in particular, a doctorate--any doctorate--was virtually a passport to security and prestige. After generations of neglect, higher education came into the mainstream of the American dream.

1970-75: THE COOLING OF DEMAND

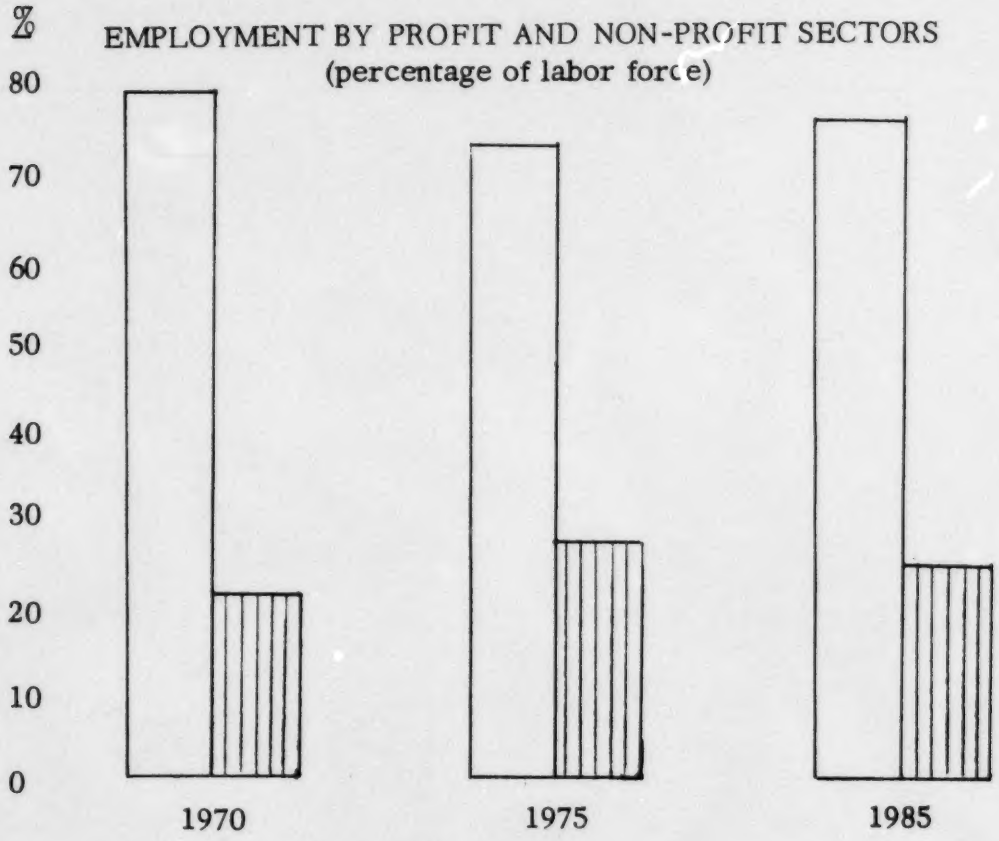
There is evidence that all this may be changing. The ever-higher proportion of college graduates employed in both the nonprofit and the profit-making sectors of the economy is no longer placed exclusively in high-status jobs. By 1975, some 36 percent of all employees in the nonprofit sector had four or more years of college education. Teachers, of course, make up a large part of this sector, and most of them are required to have at least a bachelor's degree. During the first half of the 1970's, the proportion of federal government employees with four or more years of college increased from 20 to 28 percent. The nonprofit sector has always had more use for college graduates than the profit sector. Nevertheless, by 1975 nearly 10 percent of all those employed in the latter were college graduates. For the economy as a

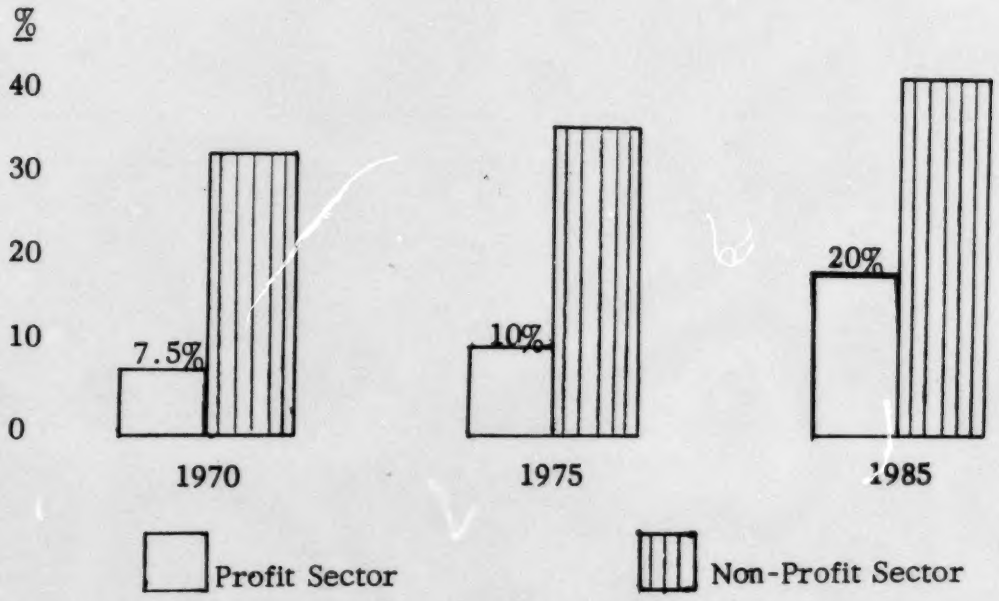
whole, the figure is now some 17 percent. By 1985, if current trends continue, it will be close to 20 percent (figure 1).

What role will a college degree play in the marketplace? In recent years, the economic value of higher education has rarely been questioned. Such complacency is dangerous. Whatever intangible goods a degree may represent, it has no intrinsic value from an economic point of view; indeed, it is as subject to the law of supply and demand as anything else that is offered for sale. In periods of high demand, each additional year of education seems to guarantee a higher or at any rate more prestigious level of entry into the labor force; it is, as we say, "money in the bank." A fast-rising supply, on the other hand, raises the possibility that many types of education beyond high school may be worth little or nothing economically; some of those individuals who made economic sacrifices to attend college, assuming an economic payoff will be disillusioned.

Every available index now points to difficulties of absorbing the products of higher education in jobs believed to be suitable for persons with this level of schooling. First warning signals appeared in the early 1970's. The percentage of college graduates reporting themselves employed as professionals or managers declined from 84 percent in 1970 to 78 percent in 1975. During the same period, unemployment among college graduates under 25 nearly tripled, as the college-educated segment of the labor force was growing 5.2 times faster than the labor force as a whole. The deterioration in the quality of jobs that college graduates

FIGURE 1


%
EMPLOYMENT BY PROFIT AND NON-PROFIT SECTORS
(percentage of labor force)
80
70
60
50
40
30
20
10
0
1970
1975
1985


%
PERCENTAGE OF EMPLOYEES BY SECTOR
WITH FOUR OR MORE YEARS OF COLLEGE
40
30
20
10
0
7.5%
10%
20%
1970
1975
1985
Profit Sector
Non-Profit Sector

are forced to take is reflected by their wage rates. From 1969 to 1974, the mean earnings of young male high school graduates increased by 32 percent, while those of young male college graduates increased by a mere 19 percent.

Those with less than four years of college were affected by the same trend, but not as severely. Their earnings had deteriorated in the previous decade. Since nearly half the men in this category had blue-collar jobs, they were not competing with college graduates. The women, however, were in a less favorable position: employed chiefly in lower-level white-collar jobs, they now had to compete with the many college graduates unable to find work in their chosen fields.

Surplus and Devaluation

Most labor analysts believe that a college degree is worth pursuing even under circumstances like these. It may be, even if education has no higher purpose than economic survival. There are fields in which college graduates automatically go to the head of the applicants' line. Once hired, they may have a better chance of being promoted. But there are also fields in which they are considered hopelessly "overqualified." Experience suggests that employers in search of persons with highly specialized skills, such as computer programmers, tend to require a bachelor's degree or more while the skills are still novel and relatively scarce. In time, however, as the novelty decreases and the skills become more widespread, the formal qualifications are lowered, until the job

becomes open to anyone who can do it. By contrast, if sufficient numbers of persons with degrees are available, the minimal educational level may never be dropped, or even increased in the long run.

Probably, a college degree is already functioning as just such a screening device for most of the areas in which college graduates are displacing employees with only some college. We suspect that the situation is like that in the early 1960's, when high school graduates steadily displaced high school dropouts in most occupations. Now it may be the high school graduates' turn to be displaced by persons with some college.

However that may be, there is no reason to believe that a college graduate in a job formerly done by a nongraduate will maintain the same average earnings as in the past. The heady atmosphere of the 1960's appears to have persuaded many graduates that, regardless of what their jobs are worth, they deserve a bonus just for being graduates. Some employers will probably continue rewarding employees for their higher educational attainment, as long as they receive a return from investment in human capital. In the 1960's, this form of return was widespread. To regard the 1960's as normal, however, is to overlook a fundamental point: increased demand for college graduates during that period was due chiefly to new professional and managerial opportunities in the nonprofit sector. In particular, it was the sudden expansion of social services at all levels of government that opened up a wide range of jobs for college graduates. Salaries for these nonprofit jobs were established by

administrative fiat, partly on economic grounds, to attract college graduates to this sector, and partly to appease civil service unions.

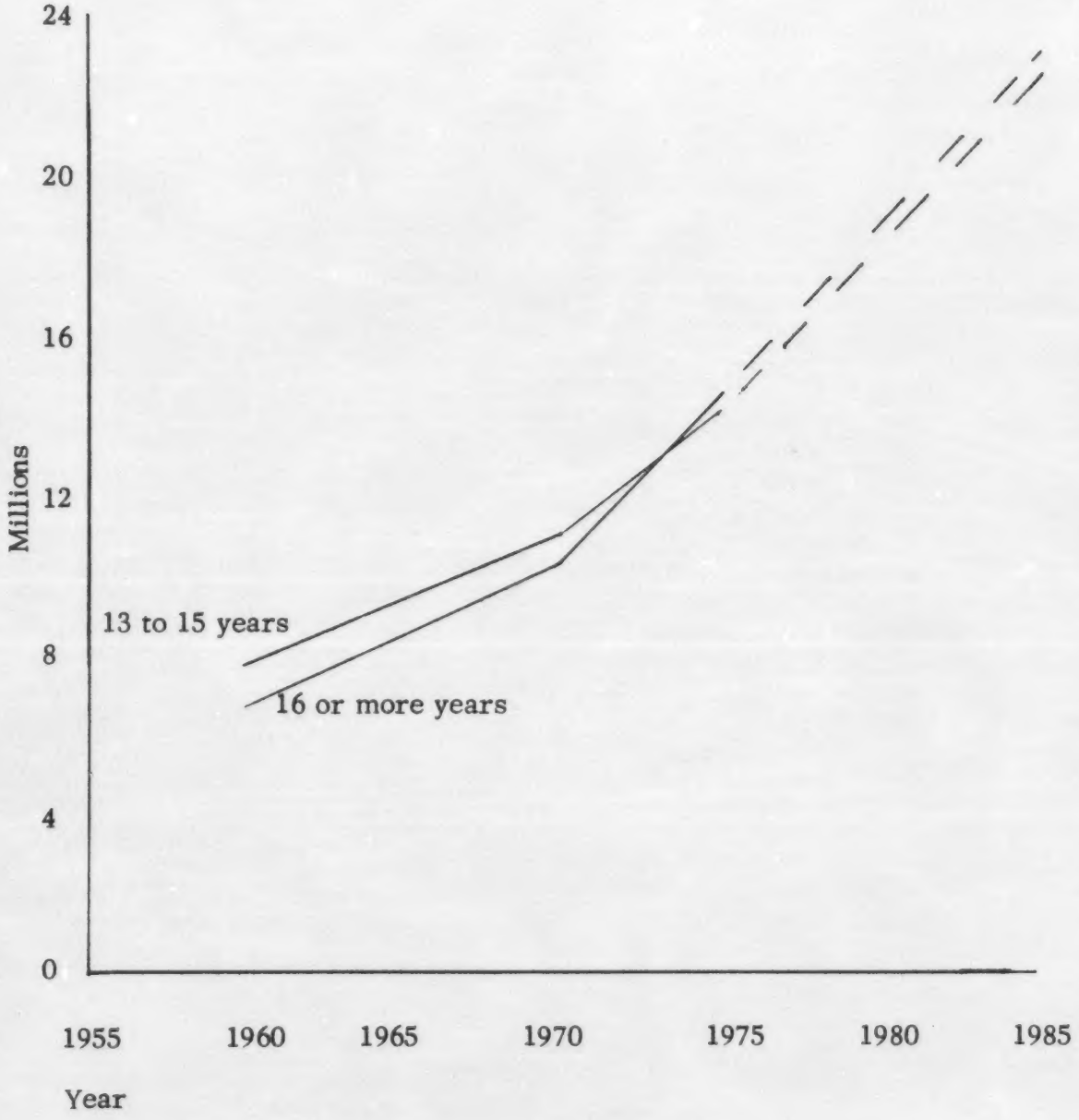
In the early 1970's, for the first time in a generation, the contribution of higher education to economic productivity had become a matter of grave concern. Despite this, the public's perception of the value or role of higher education was still rooted in the 1960's. Between 1975 and 1985, it seems likely that at least another 6.8 million college graduates will enter the job market, with a similar number of persons who have had less than four years of college (figure 2). Is the market ready to cope with this tidal wave of highly-educated job applicants? Our projections indicate that storm warnings should be hoisted without delay.

1975-85: WHERE DID ALL THE GOOD JOBS GO?

Although most college graduates (some 57 percent in 1975) are employed in the nonprofit sector, the state of the economy has a strong effect on their job opportunities. For our projections we assumed that employment in the profit sector would grow at a rate of 7 percent a year from 1975 to 1985--an optimistic scenario, in which general unemployment would fall to around 4 percent. We took a less optimistic view of employment in the nonprofit sector, because neither the political nor the economic circumstances of the 1960's seemed likely to be repeated. Nevertheless, we adopted the Bureau of Labor Statistics employment projections with only minor changes, except in the field of education. Here we reassigned the bureau's projection of new job opportunities to the profit

FIGURE 2

PERSONS IN THE LABOR FORCE WITH 16 OR MORE AND 13 TO 15 YEARS OF EDUCATION, FROM 1960 TO 1985
(millions of persons)



sector, where they have a much better chance of materializing.

We do not know what the normal aspirations of college graduates will be by 1985, but it seems reasonable to assume that they will be no lower than in 1970. Accordingly, our first set of projections for the decade 1975-85 assumed that the proportions of college graduates and persons with some college in each industry would stay, on the average, at the same levels as in 1970--a rather healthy state of affairs, in our opinion. Our second set, a little less optimistic, assumed that they would remain the same as in 1975, when jobs filled by college graduates had deteriorated somewhat. In other words, each set assumed no further deterioration in the concept of a graduate-level (or "some college") job, but the set based on 1975 conditions accepted whatever deterioration had occurred since 1970.

The results are alarming, to say the least (figure 3). In brief:

* If, from 1975 to 1985, the employment standard of college graduates in each industry is the same as it was in 1970, then there will be 22 million graduates competing for only 13.8 million graduate-level jobs.
* If the standard is the same as it was in 1975, then the 22 million graduates will be competing for 16.3 million graduate-level jobs.
* If, from 1975 to 1985, the type of jobs filled by persons with some college in each industry is the same as it was in 1970, then there will be from 21 to 23 million such persons competing for only 14.1 million jobs at their level.

FIGURE 3

PROJECTED PERCENTAGE OF COLLEGE GRADUATES AND PERSONS WITH SOME COLLEGE IN 1985 HOLDING JOBS HELD BY LESSER-EDUCATED IN 1970 AND 1975

COLLEGE GRADUATES IN 1985

% holding jobs held by non-graduates in ...

PERSONS WITH SOME COLLEGE IN 1985

% holding jobs held by high school graduates in ...

* If the standard is the same as it was in 1975, then the 21 to 23 million persons with some college will be competing for 16.5 million jobs.

MORE GRADUATES, FEWER OPPORTUNITIES

These figures should not be taken to imply that no new openings will be created at professional and managerial levels. But they will not be created fast enough. For college graduates, the nonprofit sector will be an area of decreasing opportunities, although by the end of the period it will employ 35 percent more college graduates than at the beginning. Declining school enrollments will place a lid on openings for teachers. Citizens are also likely to put a limit on the number of persons employed by government or nonprofit activities dependent on support from public sources. New jobs will be created for persons with some college in the nonprofit sector at only about 65 percent of the rate of the first half of the 1970's.

Will the profit sector come to the rescue of college graduates by generating a much larger proportion of professional and managerial jobs? Our projections indicate that it will not. An economy in which the service sector is growing and the manufacturing sector shrinking may very well need fewer managers, not more. Only 11 percent of the total labor force can be classified as managers or administrators, a figure that has remained practically the same since 1960. We estimate that it could fall as low as 8 or 9 percent by 1985; the Bureau of Labor Statistics also foresees a slight decline. The percentage of professionals in the labor

force may not decline, but it will certainly grow far more slowly than in the 1960's, when teaching jobs abounded. The Bureau of Labor Statistics places it at 15.7 percent of all those employed in 1985; we believe that it will fall back to about 15 percent, the same as in 1970.

A Buyer's Market

The social impact of these developments will be very unevenly distributed. Older managers and professionals, if recent legislation to protect older workers is not repealed, will sit tight. Those entering the labor force for the first time will find that their college experience has been devalued in one of two ways. First, since employers will be able to attract all the college-trained employees that they need, even at lower starting salaries, they will be hired for lower-level positions, and hope, perhaps vainly, to be promoted later. Second, competition for the better college-level jobs may become so intense that only applicants with post-graduate degrees will be considered for them.

Whether employers do these things or not, it appears that nothing short of a political or economic miracle can prevent a decline in the occupational prospects of college graduates. By 1985, about 27 percent of all college graduates will have jobs they would probably have turned down 10 years earlier (see figure 3). About 50 percent of those with less than four years of college may be filling jobs now taken by high school graduates. An entire generation of young men and women will find their education increasingly less relevant to their work.

2. THE STUDENT SHORTAGE

If college is no longer the highroad to a good job, what will happen to college enrollments? In the United States, going to college has always been extolled as a sound financial investment, certain to pay off in higher lifetime earnings. With college tuitions at their present level, the hollowness of this claim will become increasingly apparent. In the past, students have switched from major to major as the job market was expanding or contracting. Will they continue to invest in a form of job training that brings them less financial return than the alternatives?

THE NO-SHOW GENERATION

To us, it seems doubtful that foregoing postsecondary education completely is the alternative that most high school graduates will choose in the long run. In the early 1970's we might have thought differently. Widely publicized reports of declining enrollments took on an almost apocalyptic character when some colleges closed their doors forever. The statistics, however, are less dramatic. Of the 114 postsecondary institutions that ceased operation between 1970 and 1975, the great majority were either private two-year colleges that succumbed to nearby competition or Catholic seminaries hard hit by declining interest in the priesthood. The closings involved scarcely thirty thousand of the eight to ten million students enrolled in postsecondary education during that period.

The real story was that total enrollments continued to grow, but only about half as fast as in the late 1960's. The end of the draft has been cited as one factor in the slowdown; so has disillusionment with college as an investment. Neither, in our opinion, accounts for the pattern of enrollment that emerged by the mid-1970's. College students may be disillusioned, but they are also rational. Changing labor market conditions have impelled some of them not to give up on postsecondary education but to take a far more selective interest in it.

Such, at any rate, is our interpretation of the way in which the new growth is distributed. Planners in education were caught by surprise when degree-credit enrollment, between 1970 and 1974, increased by only 14 percent and total enrollment by only 19 percent; at some four-year colleges, in the private sphere especially, it was as if an entire generation had never shown up.

Private Losses, Public Gains

Meanwhile, the harassed administrators of two-year colleges were trying to cope with an 88 percent increase in non-degree enrollment, mostly in vocational subjects. Even the public four-year colleges began losing students to this rush for vocational training. The big losers, however, were the private colleges. Not only the four-year institutions but also the undergraduate divisions of many universities failed entirely to share in the general growth. Private universities, thanks to the growing popularity of their professional and graduate schools, were able to

register a net gain. But enrollments in the private sector as a whole increased at only one-sixth the rate of enrollments in the public sector.

We shall have more to say on this topic below. Here, it should be noted that the trend in favor of public institutions is not simply a matter of different levels of tuition; indeed, most undergraduate students' finances, as we will demonstrate, are less constrictive than is generally supposed. More important is the spirit of vocationalism encouraged by today's labor market. In 1970, about one in six of all students who enrolled in postsecondary institutions for the first time chose a vocational program that did not lead to a degree. By 1975, the figure was one in four. The same spirit was evident in degree programs: in the fall of 1974, for instance, some 40 percent more freshmen than seniors planned to major in business.

Courses in business are no less vocational than courses in auto mechanics. Public systems, however, are more likely to offer vocational training at all levels. To insure the accessibility of such training, they also make substantial provisions for part-time study. Private four-year colleges, in deference to the concept of a liberal arts education, compete spottily and ineffectively with them in both respects. As long as this difference in emphasis in educational offerings continues, any widespread demand for vocational training is bound to increase public enrollment at the expense of private.

Financial Consequences

Financially speaking, loss of enrollment is a more serious matter for the private than the public sector. Each spends about the same amount per student for instruction, but the private sector derives over four times as much of its instructional funds from tuition fees. Public students, in other words, are heavily subsidized.

Will the survival of many private four-year colleges be endangered by their declining enrollments? Our findings, discussed in more detail below, suggest that this is a distinct possibility. As a general rule, private colleges that lost enrollment between 1970 and 1974 were unable to reduce their costs per student proportionately. The combination of higher costs per student and a declining student body does not bode well for their future. Most private institutions, to judge from a survey published by the Association of American Colleges in 1975, believe that their finances are sound. * We do not dispute this. We do believe, however, that the private sector has been consistently less successful in managing their costs. Where will this lead?

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*Howard R. Bowen and W. John Minter, Private Higher Education (Washington, D. C.: Association of American Colleges, 1975). This study is based on a sample of 100 institutions, but they appear representative of the sector despite their higher-than-average selectivity.

THE EMERGING PICTURE

Whatever the current impact of declining enrollments, they cannot be dismissed as minor. Over one-third of all postsecondary institutions enrolled fewer students in the 1973-74 academic year than they had three years earlier; for 1 in 9, the loss exceeded 10 percent. The focus of the interest in postsecondary education is shifting, and some institutions are suffering as a result of these changes. We see it, however, as just one part of the emerging picture. From 1970 to 1974, the number of persons over age 30 enrolled in graduate or undergraduate programs increased by an astonishing 145 percent. There has also been an increase in the proportion of recent college graduates opting for graduate study. Americans over 25 are going to college in greater numbers than ever before. Younger persons are not as likely to enroll as in the past.

Solving Last Year's Problems

Here again the principal error of planners in the early 1970's was to assume that the 1960's would be repeated. A projection issued by the Department of HEW in 1970 overestimated the number of 1974-75 high school graduates by some 365,000. The reason was that high school graduation rates had already peaked. So, too, had the rate at which recent high school graduates were enrolling in some form of postsecondary education. By 1974, some 48 percent were doing so, down 7 percent from the peak year of 1968.

Paradoxically, enrollments declined as plans to enroll picked up. A remarkable 68 percent of all high school seniors were either planning on or considering college in 1974. In 1966 the figure had been only 60 percent, but 50 percent had put their plans into execution--2 percent more, it will be recalled, than in 1974. It appears that a sizable proportion of recent high school graduates are merely postponing college enrollment.

If educational planning is to be anything more than a futile attempt to solve last year's problems, it will have to be based on projections that allow for variations in factors like these. One reason such projections are not available is that the basic data are inadequate; the National Center for Education Statistics and the U.S. Current Population Reports of students are usually five percent apart.

ENROLLMENT IN 1985

Our projections are based on what we hope is a realistic assessment of the key enrollment variables: high school graduation and college enrollment rates; enrollment status ratios (for example, the ratio of full-time to part-time college students); and the ratio of public to private enrollment. Using these variables we drew up two scenarios to yield two sets of estimates--high and low--of postsecondary enrollment for the period 1979-80 to 1984-85. The assumptions were as follows:

Assumptions for high estimate: A slight increase in the high school graduation rate but none in the graduates' college enrollment rate until they passed 24, after which it was allowed to increase slowly; the same ratio

of part-time to full-time undergraduate students as in 1974-75, but a higher ratio of graduate to undergraduate students; and the same ratio of public to private enrollment as in 1974-75.

Assumptions for low estimate: The same rates for high school graduation and college enrollment as in the high estimate; a rather moderate increase in the ratio of part-time to full-time students, with a higher ratio of graduate to undergraduate students; and a correspondingly higher ratio of public to private enrollment, as students shift from full- to part-time study.

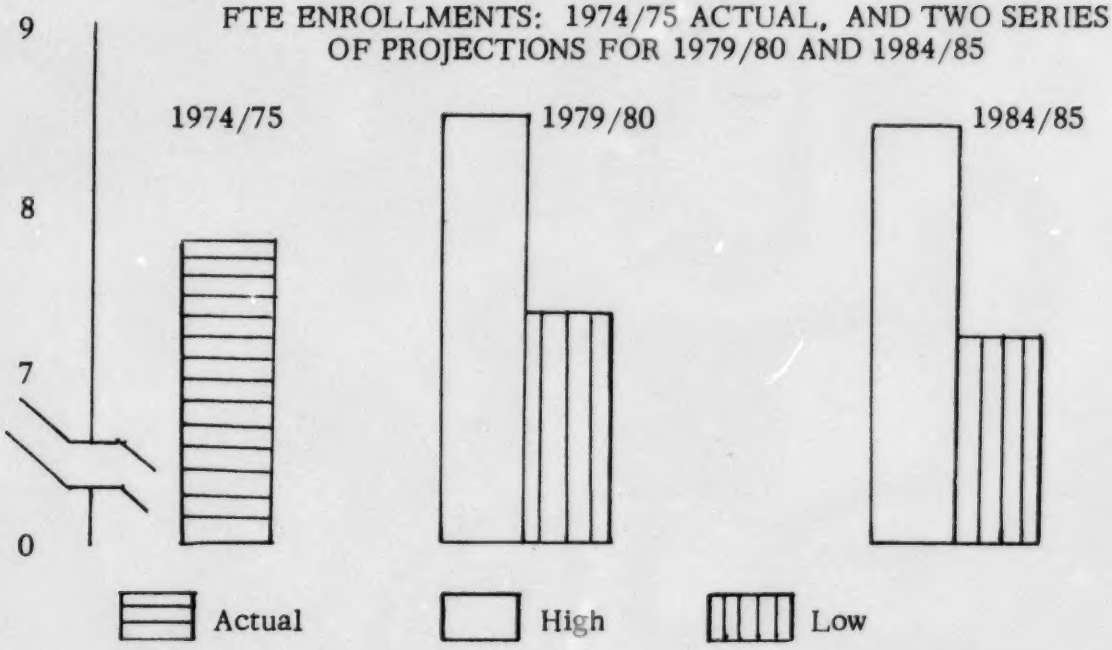
In order not to exaggerate the effect on institutions of the trend toward part-time study, we calculated the results in terms of full-time equivalent (FTE) enrollments, that is, by counting part-time students as if each was a fraction of a full-time one. The results were clearcut: under our assumptions, there may be stability or decline in postsecondary enrollment, but certainly not growth (figure 4). More specifically, our projections show that by 1984-85:

According to the high estimate

* Overall FTE enrollment will be about the same as in 1975.
* Enrollment will have decreased slightly in the private sector and increased slightly in the public sector.
* The ratio of graduate to undergraduate students will be the highest

FIGURE 4

FTE ENROLLMENTS: 1974/75 ACTUAL, AND TWO SERIES OF PROJECTIONS FOR 1979/80 AND 1984/85



Thousands of FTE

	1980	1985
High	8,475	8,406
Low	7,317	7,209

in history.

According to the low estimate

* Overall FTE enrollment will decline by some 14 percent.
* The private sector will lose about 28 percent of its students and the public sector about 10 percent. (See discussion on p. 28.)
* The ratio of graduate to undergraduate students will still be the highest in history.

Motives for Enrollment

What of the motives that underlie these trends? We do not have a model which assesses them statistically, but some inferences fit the facts better than others. Part-time enrollment in a four-year institution is a rational choice for someone who wants the prestige of a degree but does not think it worthwhile to lose income while studying. According to our analysis, the simple availability of part-time degree programs, as measured by the number of campuses per 1,000 square miles that offer them, is the most important factor encouraging part-time study for all except graduate students.

The factors that encourage private or public enrollment are not as clear. More above-average students continue to enroll in private institutions although students pay a higher proportion of the costs of instruction in private schools. No doubt it is their prestige that gives private institutions the edge.

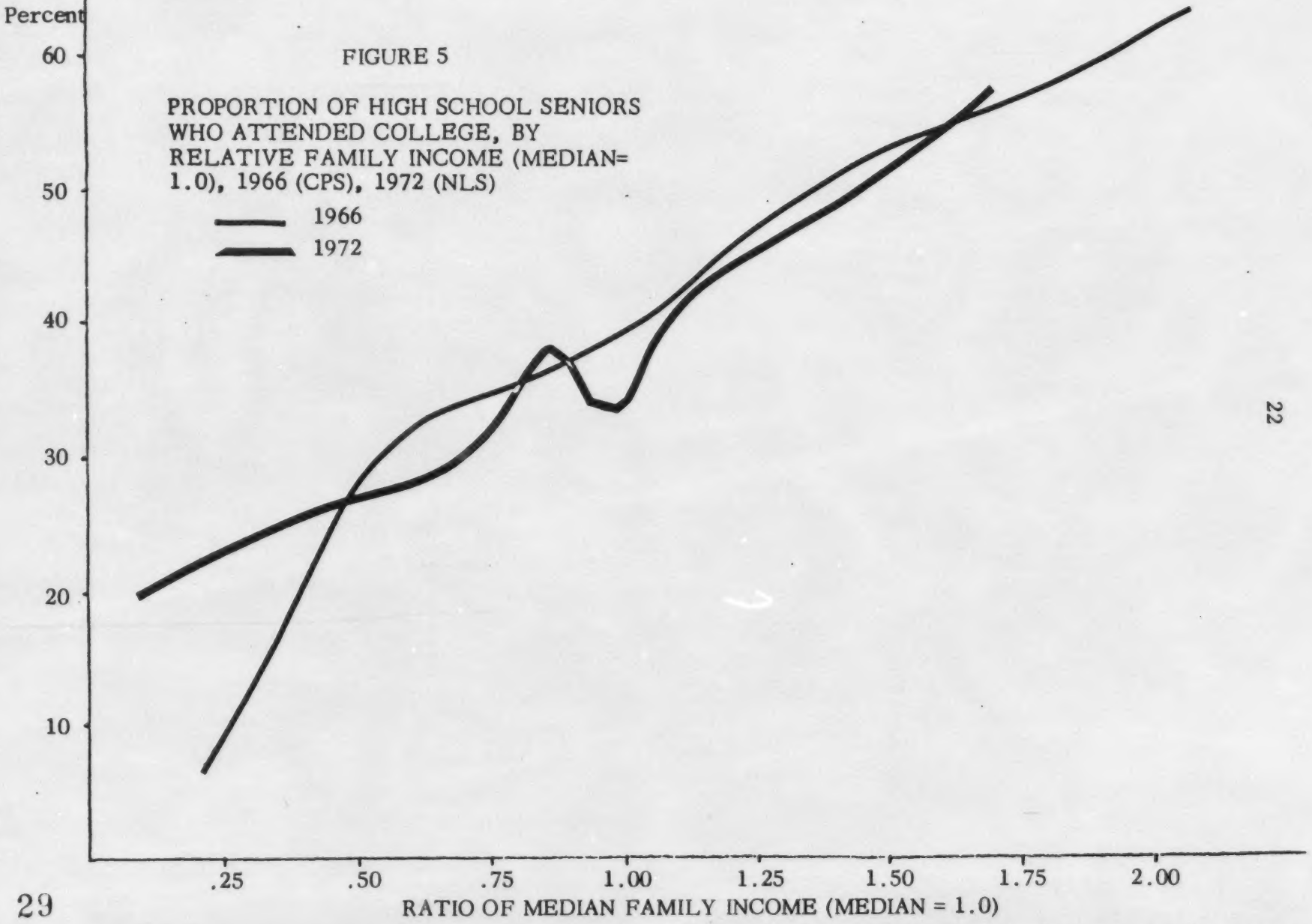
HOW ACCESSIBLE IS HIGHER EDUCATION?

Undergraduate education appears more accessible to people with limited means than in times past. Between 1966 and 1972, high school seniors from the very poorest families increased their enrollments in college faster than other groups (figure 5). By contrast, there appeared to be a lag in enrollment of students with families below the median.

Equality of access and retention is still a long way off. In 1975, after the BEOG program was in full swing, we estimated that children of parents with incomes of $25,000 a year were 50 percent more likely to be enrolled than the average. (See Middle Income Students and the Cost of Postsecondary Education, EPRC for Higher Education, Table 8.)

FIGURE 5

PROPORTION OF HIGH SCHOOL SENIORS WHO ATTENDED COLLEGE, BY RELATIVE FAMILY INCOME (MEDIAN= 1.0), 1966 (CPS), 1972 (NLS)



3. FINANCIAL CONSTRAINTS

With so much agreement on the need for postsecondary education, the financial future of postsecondary institutions should be secure. Is it?

Making postsecondary education more accessible has not made it any cheaper to supply. Since the 1930's, instructional costs per student have remained about the same in real terms.* The rapid expansion of postsecondary education in the early 1960's--an expansion spearheaded by the junior college movement--kept average costs from going up. Institutions with lower costs per student grew faster than those where costs were high.

SOAKING THE FACULTY

In individual institutions, costs in constant prices have a tendency to rise, since colleges and universities are labor-intensive enterprises, which until recently paid competitive wages to their staffs. As long as they did not benefit from productivities, their real costs per student kept on growing. This trend was abruptly ended in the early 1970's, as the revenues of postsecondary institutions began to suffer from the unexpectedly slow growth of the economy. The recession of 1971 to 1975 deprived them of nearly $2 billion in income from various sources,

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*See June A. O'Neill, Sources of Funds to Colleges and Universities (Berkeley, California: Carnegie Commission on Higher Education, 1973).

and forced institutions to economize drastically. The majority of public institutions were less affected because state legislatures were, on the average, responsive to the needs of higher education. The private ones, more dependent on tuition, gifts and endowment income, had to economize more strictly.

As a result of these savings, both sectors avoided serious trouble for the time being. In real terms, instructional costs per student were practically the same in 1975 as they had been in 1970. How was this achieved? Our figures show that both public and private institutions chose to make their principal cuts in the same area: faculty salaries.

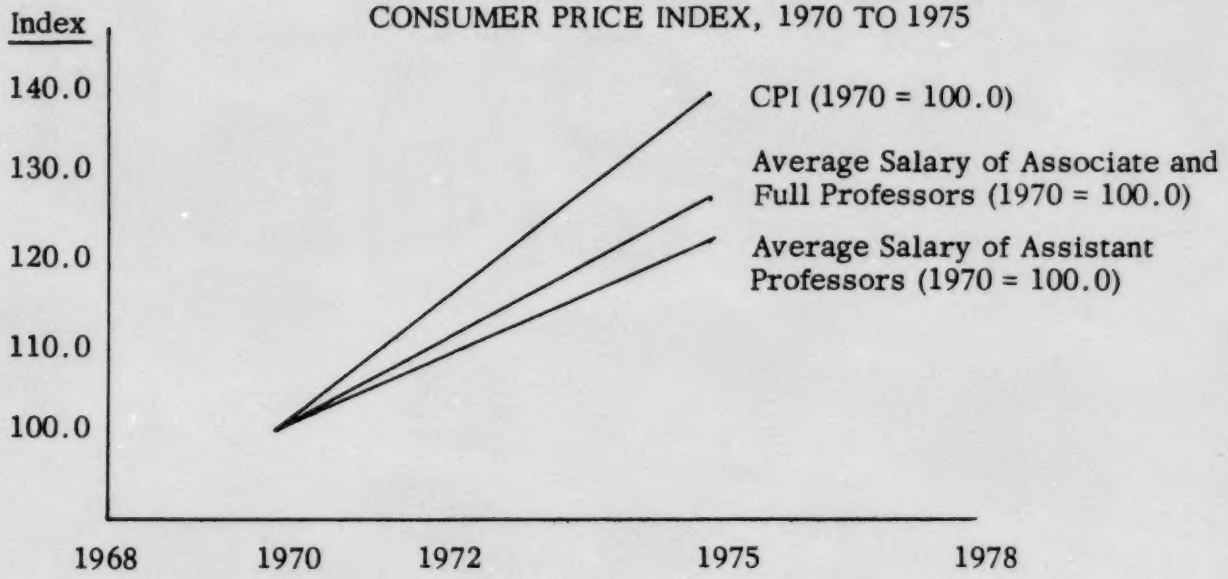
IS THERE A CRISIS?

Such figures do not suggest a crisis; on the contrary, American postsecondary education would appear to be coping with its financial problems. It should be remembered, however, that these are aggregate trends. Detailed analyses, by sector and type of institution, are more disquieting. Moreover, it is impossible to regard the situation as stable if inflation is to be contained by letting faculty salaries decline in real terms (figure 6). A group that has become accustomed to a steadily rising standard of living is not likely to tolerate a falling one without taking some collective action to protect their real wages.

There would be no need to issue such warnings if the problems of the early 1970's were likely to go away. In our opinion, they are not.

FIGURE 6

AVERAGE FACULTY SALARIES AND THE CONSUMER PRICE INDEX, 1970 TO 1975



During that period, the revenues of postsecondary education in the aggregate increased some .5 percent per year more slowly than its costs. Federal aid, as a proportion of total revenues, stayed about the same, while the proportion represented by tuition actually declined. The crisis, then, may not have arrived yet, but it can be discerned on the horizon. What shape it will take depends on the relationship of the public and private sectors. As the following brief analysis shows, each is at a very different stage of development.

THE PUBLIC SECTOR: HOW UNSELECTIVE CAN IT AFFORD TO BE?

Some students in the public sector behave very much like ideal consumers in classical economics: the features that weigh most heavily with them in choosing an institution are greater proximity and lower cost. So much is clear from the remarkable vitality of public two-year colleges, which continue to increase their share of public enrollment at the expense of private four-year institutions and universities. If this trend persists, the principal losers will be the private sector.

Nevertheless, some 25 percent of all public campuses actually lost students during this period. The main problem confronting public four-year college administrators is not lack of students--although many public systems have failed to grow as much as expected--but changing attitudes among students. Today, the part of the system that is most popular with

students is also the least selective. Junior colleges do not have expensive graduate programs, but their instructional costs per student, as we have already pointed out, differ little from those at four-year institutions, after suitable adjustments for the cost of instruction by level.

An appropriate unit of comparison here is one that allows for the fact that graduate and professional students, who of course do not enroll at junior colleges, inevitably use more instructional resources than undergraduates. One such unit is what we called the "standard undergraduate student" (SUS). We derived it from enrollment figures by counting each undergraduate as 1, each professional student as 2.8, and each graduate student as 3, roughly in proportion to what they cost to teach.

In the academic year 1974-75, instruction costs per SUS were $1,991 at public two-year institutions, $1,923 at public universities, and $2,131 at all other public four-year institutions. Total instructional costs for students at the two-year institutions went up (in constant dollars) by 51 percent between 1971 and 1975. These students were even more heavily subsidized than public students usually are: their tuition paid only about 16 percent of their instructional costs (the average for all public four-year institutions was 22 percent).

THE PRIVATE SECTOR: HOW SELECTIVE CAN IT REMAIN?

At first sight, students in the private sector appear to be members of an entirely different economic breed: they choose to pay more for their education. It may be argued that in some cases such students are

getting value for money. It is the less affluent institutions in the private sector (which spend no more per student than their competitors which are publicly sponsored and charge more) which are likely to have survival in doubt. Those in the middle level of selectivity may appeal to a clientele which needs to be certified as above average. The more affluent and selective private institutions are able to charge higher tuition fees because their resources per student are manifestly greater and their "certification" power is high.

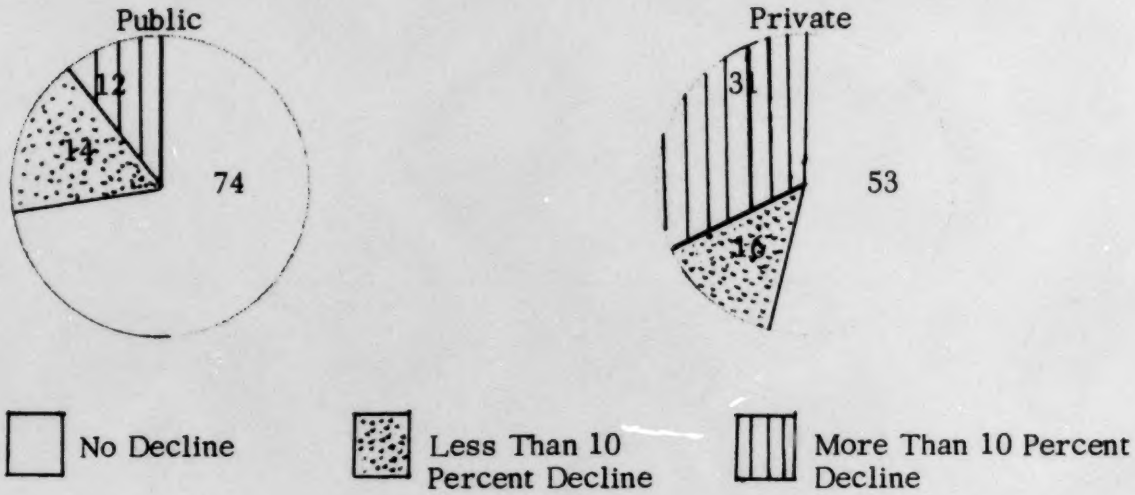
By contrast, the less selective institutions are caught in a vicious cycle: they used to be relatively cheap, but now as lower prestige results in declining enrollments, costs per student rise, and so do their tuitions. Private institutions, in short, are penalized for lower selectivity while public ones are rewarded for it. By 1975, the private institutions that had lost the most students since 1971 were spending nearly as much per student as the ones that had gained the most. Since the resources of schools with shrinking enrollment were not increasing nearly as fast as their costs, their financial condition could not be called stable.

By 1985, the private sector as a whole may be suffering from the same malady. Nearly 50 percent of all private campuses lost students between 1970 and 1975 (figure 7).

How far can these trends be projected into the future? Simple projections, in our opinion, would be inappropriate; too many variables

FIGURE 7

PERCENTAGE OF CAMPUSES WITH NO DECLINE, LESS THAN 10 PERCENT DECLINE, AND MORE THAN 10 PERCENT DECLINE IN ENROLLMENTS, OVER THE PERIOD 1970-75



are involved. In the scenario outlined below, we have included all the variables for which the data permitted us to make reasonable assumptions.

A SIMULATION

We have already shown that private FTE enrollment will probably decline by 1985--possibly as much as 28 percent. A higher proportion of graduate and professional students to total students will cause financial difficulties for some private institutions. Since both public and private FTE enrollment may decline, the postsecondary sector may indeed be in a crisis. To appreciate the magnitude of possible difficulties, the various possible outcomes must be translated into terms of costs and revenues.

As before, we tried to be relatively optimistic: the economic conditions of the early 1970's, we assumed, could not last forever. On the other hand, nor do we expect a rerun of conditions from 1940 to 1970, when faculty salaries increased three times faster than the cost of living. Our high estimate was that in the future they would increase at an average rate of only 3 percent per annum--about the rate at which labor force productivity increases in a fast-growing, full-employment economy. Our low estimate was 2 percent a year, or slightly under the growth rate for productivity in a slower-growing economy. High and low estimates were also made for other wages and salaries, operational and maintenance costs (for which we made no low estimate, assuming that the current rate of growth would continue regardless), and library costs. Since declining enrollments result in fewer junior faculty being hired,

further adjustments were made for the higher salaries appropriate to a higher proportion of senior faculty. Nor did we overlook the role of budgetary policy: for instance, we assumed that public institutions would cut costs if enrollments fell, and that the less selective private institutions would not charge higher tuition than the more selective ones.

Revenues

Our major assumption here was that patterns of support for postsecondary education would remain about the same as in the 1959-75 period. High and low estimates were prepared for tuition and fees, state and local appropriations, student aid, and income from endowment and gifts. Our regression equations fit well for all major sources of revenue, so we are reasonably confident in these projections. The least certain projection is that of income from endowment and gifts, which is so important to the private sector. It is less predictable than public appropriations.

A CLOUDED FUTURE

Our model enables us to project public and private revenues in 1980 and 1985 for every possible combination of low or high enrollment with low or high economic growth. Here, only the salient results will be given.

* In 1985, costs per SUS student will be eight percent higher in the private than in the public sector.
* Costs per FTE student will be 40 percent higher in the private than in the public sector.

* Private tuitions will be about 4.3 times higher than public tuitions in 1985.
* Tuitions will rise between 37 percent (low growth) and 45 percent (high growth) from 1975 to 1985.
* Between 1975 and 1985, revenues available for instruction will increase between 52 and 79 percent in the public sector and between 25 and 55 percent in the private sector.
* Under our assumptions about support patterns and academic policy, the public sector will remain solvent through 1985 in all cases.
* In 1980, expenditures in the private sector will equal revenues.
* By 1985, if our assumptions continue to hold, the private sector might have a deficit equal to eight percent of receipts if enrollments are high, and between one and five percent of outlays if enrollments are low.

In short, in order to remain solvent, the private sector will either have to cut down the instructional resources to a level supplied below the public sector, or reduce the level of enrollments, spreading the benefits of endowment income and private philanthropy over a fewer number of students. In the first instance, in order to remain competitive, it will be challenged to introduce reforms undreamed of today. In the second, and more likely instance, the private sector will have to reconcile itself to closing or consolidating roughly one quarter of all institutions, allowing most low enrollment, unendowed and low selectivity institutions to lose their identities.

4. PH.D.S AND THE MARKET FOR FACULTY

In theory, the market for any skill is self-regulating; when market information is plentiful, supply supposedly accommodates itself to demand. There is certainly no shortage of information about the academic job market. It appears, however, that graduate students are encouraged by their universities to adopt an ostrich-like attitude. The situation they will encounter between now and 1985 is a classic case of market failure. From 1975 to 1985 there will be some 30,000 to 40,000 new Ph.D.s a year. They, with as many of their underemployed colleagues as are still in the market, will be competing each year for some 13,000 academic jobs. If the market is to regulate itself successfully, the supply of Ph.D.s will have to shrink drastically.

Fewer Jobs, More Ph.D. Candidates

To acknowledge the Ph.D. glut is to uncover a disquieting relationship: if there were fewer Ph.D. candidates, fewer faculty members would be needed to teach them. The lion's share of the faculty jobs, even in universities, is teaching. Of the nearly 400,000 full-time post-secondary faculty members in 1972, a mere 36,000 were engaged full time in research and development, and it is generally agreed that this number, unless support patterns change drastically, will remain about the same for the foreseeable future. Meanwhile, it looks as if teaching

faculty will have less time for the research on which their scholarly reputations depend. The trend toward fewer job openings has so far been coupled with one toward more students per faculty member.

IS EARLY RETIREMENT THE ANSWER?

As fewer junior faculty are hired, the proportion of tenured faculty goes up. In 1970, some 40 percent of all full-time faculty were either full or associate professors. By 1976, the proportion was between 46 and 47 percent. The prospect of a steadily aging faculty has led some university administrations to consider early retirement as a means of creating job openings.

According to our projections, it is most improbable that early retirement on a sufficient scale will ever take place voluntarily. Let us consider the fairly modest goal of providing some 35 percent of all new Ph.D.s with full-time academic jobs during the period 1975 to 1985. The number of job openings would have to be about 140,000. Such large numbers of older faculty would have to retire that this idea is clearly impractical.

It is hard to imagine what incentives might attract highly-educated young people, after a long and expensive training, to take jobs with a short career span unless both starting salaries and retirement pensions were substantially increased. If they were, the savings effected through early retirement programs would be wiped out. Compulsory retirement

on this scale would appear to be ruled out by tenure arrangements and by current laws against age discrimination. Perhaps, if retired faculty members could easily find suitable new jobs, a voluntary approach might work. There is already considerable movement out of university teaching into such different but related fields as educational administration. Discussion of this point requires a more detailed account of our projections, to which we now turn.

POSTSECONDARY TEACHING FACULTY IN 1985

In order to make accurate projections of faculty hiring rates we needed to know how many full-time teaching faculty there were in each age bracket during the base period.

To our surprise, we found that this information was not available. The Census Bureau collects information on faculty by age but makes no distinction between full-time and part-time teachers. We therefore made our own distinction: a part-time faculty member was one who, in 1969, was both over 25 and earned less than $6,000 that year. We estimated the full-time teaching faculty at 338,000 in 1970 and 369,000 in 1975--an increase of 9 percent between these two years. We also estimated that the median age of full-time faculty members had increased during the same period (from 38.5 to 40.6), as had the proportion of them who were women (from 21 to 24 percent).

Age, Sex, and Careers

Tabulations by age and sex over a five-year period revealed

clearcut differences between male and female career patterns. The men tended to begin full-time work between 25 and 34, while the women, if indeed they had begun as early, often left in their early thirties, presumably in order to have children. However, they also tended to return after 45, while a large proportion of men had already quit teaching by that age. The census figures, of course, do not tell us where they went, but it is clear from other sources that they entered university administration and other areas in which they suffered no loss of prestige or income.

Between 1970 and 1975, some 20,000 men quit postsecondary teaching to seek careers elsewhere. In so doing, they created more full-time vacancies than either those who retired (13,000) or died (12,000). About 76,000 persons (54,000 men and 22,000 women) entered the ranks of full-time faculty during the same period--less than half the number who earned Ph.D.s. Clearly, if men over 45 are no longer able to leave the field in such numbers between 1975 and 1985, the rate of entry will be much reduced. In our projections, we made the fairly optimistic assumption that older faculty would continue to quit the field at the same rate as they did from 1970 to 1975. It is optimistic because if FTE enrollments decline then there will be fewer job openings in university administration.

The Glut Continues

Would higher enrollments create more full-time faculty jobs? Here we returned to our projections of FTE enrollment. According to our high estimate, there will be 8.5 million FTE students in 1980 and 8.4

million in 1985. According to our low estimates, there will be 7.3 million in 1980 and 7.2 million in 1985 (see figure 5, above). Our estimates of deaths and retirements of full-time faculty were based on the 1970-75 data summarized above. We made the same assumptions as before about the rate at which new Ph.D.s would be produced. Chiefly, we wanted to project the ratio of new Ph.D.s to net hires, that is, to vacancies filled by adding new members to the full-time faculty rather than promoting old ones. The results show that the Ph.D. glut will continue almost without relief.

* With the high enrollment projection (cited above), the number of full-time faculty will remain stable from 1975 to 1980 but decline by some 6 percent from 1980 to 1985 (figure 8).
* If the low projection of enrollments materializes, the number of full-time faculty will decline by some 9 percent from 1975 to 1980 and by some 5 percent from 1980 to 1985.
* Net hires of full-time faculty from 1975 to 1980 will total between 8 and 23 percent of Ph.D. production during the period (figure 9).
* Net hires of full-time faculty from 1980 to 1985 will total about 18 or 19 percent of Ph.D. production during that period (figure 9).
* The median age of full-time faculty will be a little over 42 in 1980 and between 44 and 45 in 1985.
* The proportion of full-time faculty members who are female will increase by over 1 percent from 1975 to 1980 and by nearly 2 percent from 1980 to 1985.

FIGURE 8

PERCENTAGE INCREASES IN FTE STUDENTS AND FULL-TIME FACULTY, 1975 TO 1980 AND 1985

	High Enrollment Estimate	Low Enrollment Estimate
	(thousands of FTE)	
1980	8,475	7,317
1985	8,406	7,209

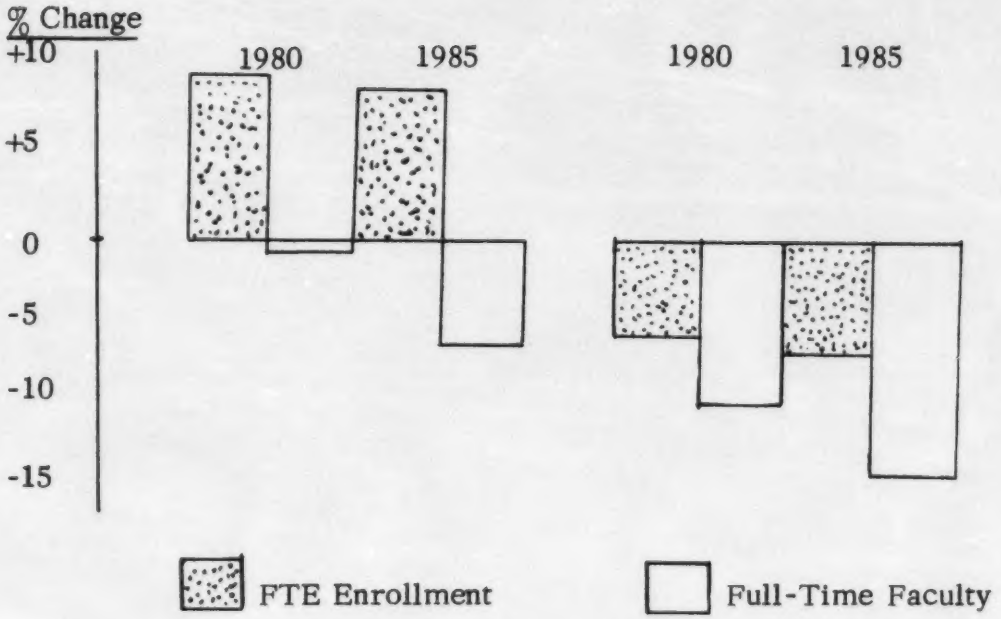
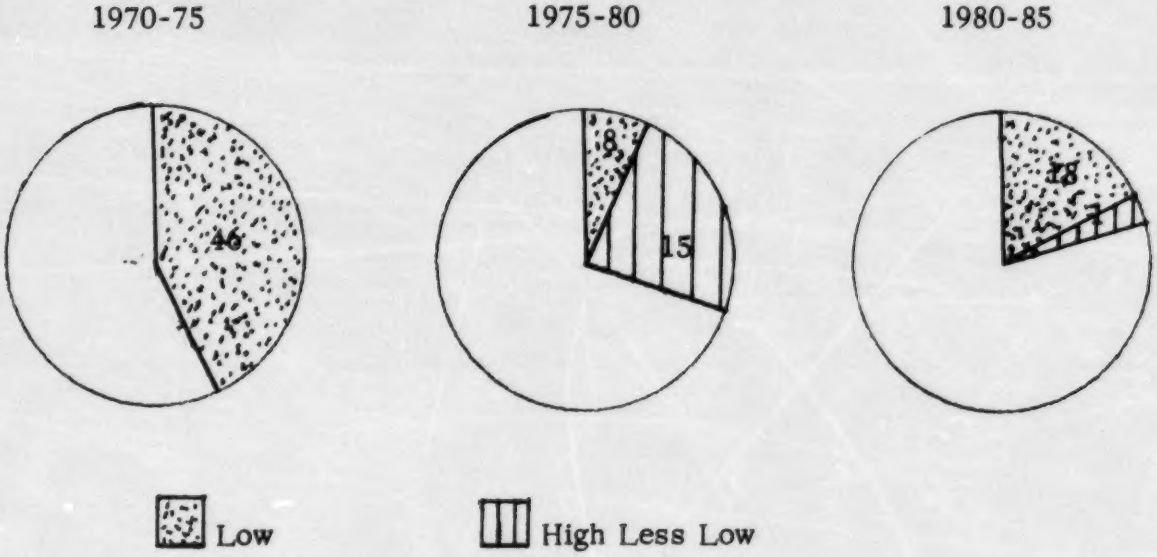


FIGURE 9

HIGH AND LOW ESTIMATES OF NUMBER OF OPENINGS FOR FULL-TIME FACULTY AS A PERCENTAGE OF NEW PH.D.S, 1970-85
(percent)



5. ISSUES AND RECOMMENDATIONS

If our projections are even approximately correct, then American higher education will be forced to operate in a penurious and contentious environment. Indeed, some institutions are experiencing both penury and declining faculty morale today.

Far more is at stake than institutional finances, faculty salaries, or the job opportunities of Ph.D.s. For many years now, policy makers have been so preoccupied with equal access to higher education that they have neglected to ask what will happen when it is achieved. When college degrees were rare, it was reasonable to assume that earning one would lead to a better life. As for that rarest of all credentials, the Ph.D., its possessor was at the very least assumed to be guaranteed gainful employment in some field where his training would be used. Neither assumption is valid any longer.

IS IT WORTH GOING TO COLLEGE?

This is a misleading question if posed in terms of some hypothetical individual acting in complete isolation. Since close to 70 percent of high school graduates still plan on college in some form, lack of college experience will continue to be a disadvantage for all white-collar job applicants and even some blue-collar ones. The real question is what kind of a college such applicants should attend, and for how long. A college degree that functions chiefly as a screening device for employers has different social connotations from one that renders the graduate more

productive. Advanced degrees of any sort are a poor investment if they do not lead to jobs where the training is used. Colleges and universities should take the lead in giving students accurate information on these matters.

HAS HIGHER EDUCATION BECOME TOO ACCESSIBLE?

Are there too many college students? It may be argued that if so many of them are certain to end up being employed in jobs hitherto filled by persons with less education, then access to this type of training should be restricted.

This question, too, misses the point as long as it remains true that American society is committed to the ideal of equal opportunity for all. Historically, no area of the society has embodied this ideal to greater effect than higher education. The social costs of restricting access to it would be immense.

We do question, however, whether the resources committed to higher education are being allocated efficiently. As long as 40 percent of all students, and 60 percent of minority students, fail to earn a bachelor's degree, it is important that they do benefit from education beyond high school. Our system is not geared to delivering these benefits. Funding a suitable curriculum for these students should be high on the policy agenda. For those likely to get a bachelor's degree, and who may face the prospect of being underemployed, the right balance between vocational and general education must be struck in order to make higher education

worth the while. In the long run, it makes little sense to subsidize postsecondary institutions which no longer can attract students. On the other hand, one cannot be complacent about the rigidity in the private sector that prevents it, for instance, from increasing opportunities for part-time study. Institutions in areas where no part-time jobs exist should create some themselves. No doubt such agencies as the Fund for Postsecondary Education could help them design earn-as-you-learn programs. In the public sector, we would favor placing a ceiling on enrollments at the most selective institutions, to which students often apply without any serious assessment of their vocational needs. At the same time, the less selective public institutions should begin to offer more training in vocational skills that are actually in demand. For the next 10 years, at least, this would mean more emphasis on business and less on public service.

The question that needs to be asked is whether equal access to undergraduate education is really enough. According to our analysis, children from poor families are much less likely to graduate and work for advanced or professional degrees than their wealthier classmates. Should access to the most desirable jobs be restricted chiefly to those who can afford to remain their parents' dependents longest? This, in our opinion, is the context in which the issue of equal access should now be raised.

We also find it disquieting that an entire generation of young

graduates should be forced to scramble for jobs while their elders sit tight. Not that the latter are to be blamed: the younger generation is suffering not so much from discrimination as from a combination of demographic accident (the postwar baby boom) and slower economic growth. Here, too, the social costs of ignoring the problem could be considerable.

SHOULDN'T HIGHER EDUCATION LOOK AFTER ITS OWN?

So much federal money has flowed into higher education since the early 1960's that returning to a more laissez-faire policy would cause profound dislocations. Postsecondary institutions, private as well as public, are now more sensitive to federal policy than ever before; they cannot afford not to be. To speak of an enhanced federal responsibility toward higher education is not to propose an extension of federal control but to acknowledge the situation as it really is.

In this report we have demonstrated the existence of various trends that, if left unchecked, will cause the quality of American higher education to decline. Lack of new openings for faculty may arrest the innovative spirit of research universities. The steady erosion of faculty salaries will depress the morale of faculty still more. In part this is a normal consequence of lessening demand for faculty. But it is also the principal means by which university administrations, as they battle with rising costs on every front, are contriving to balance their budgets. In time, the quality of their faculties is bound to suffer. Faculty members who can get better-paying jobs outside academia will certainly do so

in those cases where their specialty is in demand. Overall, though, we believe that the number of suitable jobs outside teaching will shrink, and Ph.D.s both inside academia and those who have been trained for jobs that do not exist will risk becoming embittered.

In our opinion, the situation is one that calls for large-scale federal intervention. A wide range of programs should be discussed. For instance, the federal government might consider subsidizing the costs of retraining to encourage a change of career for some classes of university faculty. For others, it might create incentives to remain in academic life. More research funds, preferably for building and staffing new research institutes, would provide more job opportunities for recent Ph.D.s; more multiyear postdoctoral fellowships could fund these jobs. Such institutes would be expensive--our estimates indicate that existing support for academically based research would have to triple in order to employ between sixty and eighty thousand researchers by 1985--but surely no more so than letting an entire generation of young scholars go to waste. Much, too, could be achieved through such less expensive programs as subsidizing exchanges of senior faculty between institutions or academic teaching and research fellowships for outstanding individuals from industry and the professions.

Both energy and imagination will have to be used to deal with the Ph.D. glut. This will require better planning, which will not be possible without better information. In particular, the following statistics are needed and are not available, either at the National Center

for Education Statistics or anywhere else:

* Number of full-time faculty, by age.
* Number and workloads of part-time faculty, by age.
* Number of university administrators, by age.
* Data on younger faculty who are granted tenure.
* Data on movement into and out of full-time faculty positions.

RECIPES FOR A STRONG HIGHER EDUCATION SYSTEM

Simple recipes for a strong, or growing, higher education sector cannot be concocted easily. The relationship between suitable jobs/enrollment/institutional finances/faculty appointments, etc., is circular. Everything depends upon everything else.

Our understanding of the links is very elementary. We do not know how job prospects affect enrollment, or, for that matter, the effect of subsidies to students on their propensity to attend higher education institutions. The decisions of students to choose a given institution are clouded in mystery as well.

With our present state of ignorance, we can only simulate the impact of different policies, and then draw tentative conclusions about their effect on society at large.